

## ENGINEERING STANDARDS UPDATE

Standards are serious business, but this newsletter isn't.

### Topics this month:

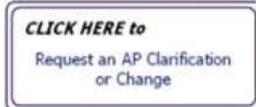
- Engineering Processes News
- Training & Qualification
- LANL Standards Issued in October
- O&M Criterion Changes
- DOE Technical Standards Action
- National Standards Action
- When Good Conduct of Engineering Isn't Followed

The LANL Engineering Standards: <http://engstandards.lanl.gov/>

### ENGINEERING PROCESSES NEWS

We're thrilled that former Processes Manager Jeff Fauble is back as a contractor about every other week. He's picked up right where he left off in April, improving the CoE Administrative Procedure (AP) set. He's now at 665-5832, [jfauble@lanl.gov](mailto:jfauble@lanl.gov).

When ideas for AP change come, please enter them in the SharePoint database. Use the fancy live button below, same one that's found in the upper right of the Processes [homepage](#).



(as a reminder, for LANL Master Specs, there's a similar SharePoint suggestion system linked above the [specs index](#) that internal users can use to log suggestions in lieu of email).

### JUST FOR FUN— PACKARD SELF PARKER

Reader Gregory Hart in SEC-PSS sent me this one. Great 30-second clip. The text that went with it was along the lines of:

People think today's car companies invented self-parking technology. Not so fast says Packard Motor Car Company, extant 1899-1956. They had one in 1933!

<https://www.youtube.com/watch?v=hMsRJrlbyMI>



**TRAINING & QUALIFICATION**

**Ethics for Engineers:** There won't be a 2018 or beyond version of this UTrain course anymore—cost too much to produce and Mike Brazile, who helped Heidi Hahn with it, just retired. NM-registered professional engineers needing CEU/PDHs can take previous year courses if they've not already, or seek other educational opportunities.

**Electrical Standards – Weds, Nov 7**

Four-hour course 17998 covers the electrical engineering standards in Chapter 7 of the LANL Engineering Standards Manual and discusses mandatory requirements and good practices for those involved in electrical design. Strongly suggested for electrical designers, electrical engineers, electrical safety officers, and facility managers. AEs are also encouraged to attend. Taught by Electrical Standards POC Eric Stromberg from 7:30–11:30 am, at White Rock Training Center TA-00-1308 Rm 105.

**HILTI HDA Undercut Anchor Training – Weds, Dec 12**

Santino Hinojos in MOF-CM-SE is managing installation training by a Hilti Field Engineer. Several TA-55 craft and Field Engineers located therein took it in August and October, and now he will take interested design engineers and others space-permitting. Classroom training at MSL auditorium for 1 hour and optional hands-on (or observation of others installing) at Roads & Grounds for 1 hour (transportation down there included). UTRAIN # 43624. Questions or problems enrolling? [shinojos@lanl.gov](mailto:shinojos@lanl.gov), 606-0580

**Registering for UTrain Courses:** Go to [UTrain](#). Search on course, assign to yourself, select and enroll. Disenroll if you have to bail. AEs can also register; use token (CryptoCard) or contact Yolanda Trujillo at 665-5696 or [ytrujillo@lanl.gov](mailto:ytrujillo@lanl.gov) with Z number.

**LANL STANDARDS ISSUED IN OCTOBER**

<b>ESM <a href="#">STD-342-100</a></b>	
Ch 4 Architectural/CAD Stds Manual: The Emergency Evacuation Diagram template associated with these standards was revised.	Thanks to POC Scott Richardson and Ed Seawalt (retired).
Ch 14 Sustainable Design: References: Added NISTIR 85-3273-33 Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis – 2018 Annual Supplement to NIST Handbook 135	POC: Tobin Oruch
Ch 17 Pressure Safety: Reputable-manufacturers list	Updated. Thanks to POC Ari Ben Swartz

<b>Master Specifications</b> <a href="#">STD-342-200</a>	
05 0520R4 Post-Installed Concrete and Grouted-Masonry Anchors-Normal Confidence	Added grouted-in-concrete type. Multiple changes to align to 05 0521 r2. Elimination of Drillco Maxi-Bolt (lack of ESR). Incorporation of VAR-10213 re 14-day waiting. Incorporation of CIR-16-002 addressing that anchorage of nonstructural components to concrete need not be in accordance with the seismic provisions of ACI 318 Chapter 17 if/when such components are exempt from the requirements of ASCE 7 Chapter 13. Thanks to POC Glen Pappas.
08 8000 R4 Glazing	The product is deleted that did not fully meet the specified requirements for "non-staining." Thanks to POC Scott Richardson.
09 2116 R6 Gypsum Board Systems	Minor change to correct insulation thicknesses that were not industry standard. Thanks to POC Scott Richardson.
26 0553R5 Identification for Electrical Systems	Danger label signal lettering changed from red to white to meet ANSI Z535.4 and LANL practice at 2.8B and F. Also, condition/basis info removed from Arc Flash warning label boundary distance line at 2.8.E (Design #2); LANL doesn't take credit for the conditions. Fixed numbering of 2.8. Thanks to POC Eric Stromberg.
33 1000 R9 Water Utilities	Section 2.5.B.1 changed from A-2360-8 to A-2362-8. Also changed ASTM D2657 to F2620. Thanks to system engineer/POC Mark Trujillo.

From the "There I fixed it" stash:

**The down spout can't handle the heavy rain?  
Then let's help it...**



Fall is typically time to clean the gutters, making this somewhat timely (since in NM, canales are more common and tall deciduous trees rarer still).

### O&M CRITERION CHANGES

Below are recent [O&M Criterion](#) and related Preventative Maintenance Instruction (PMI) changes issued by MSS-MP, the Maintenance Programs Group of Maintenance and Site Services Division. Implementation is required 30 days from issue date for non-nuclear facilities, 60 days for nuclear facilities.

It's best to use Internet Explorer to access them on the SharePoint site to avoid authentication issues.

The PMIs listed below have been revised to show only the Checklists. You must refer to the associated O&M to obtain the administrative portion. Any questions, please contact the document author.

Also, Work Orders that reference the below PMIs shall also reference the below forms such that it is included in the work package:

<a href="#">PMI 403-A R7: Low- and High-Pressure Steam Boiler and Low-Temperature Water Heating Boiler Inspection, Testing, and Maintenance – O&amp;M 403: Boilers</a>	Added Step 3.3 to 403-A.006 to describe boiler refill options.
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### DOE TECHNICAL STANDARDS ACTION

Tech Stds Program [postings](#) in the past month:

DOE-STD-1095-2018	<a href="#">Department of Energy Laboratory Accreditation Program for Personnel Dosimetry</a>	Standard
DOE-NA-STD-3016-2018	<a href="#">Hazard Analysis Reports for Nuclear Explosive Operations</a>	NA-Standard
DOE-STD-3028-2000	<a href="#">Cancellation of Department of Energy Technical Standard DOE-STD-3028-2000, Criteria for Packaging and Storing Uranium-233-Bearing Materials</a>	Cancellation Memo
DOE-STD-1207-2012 Reaffirmed October 2018	<a href="#">Protection Program Defensive Planning for Fixed Facilities</a>	Standard
DOE-HDBK-1139/3-2018	<a href="#">Chemical Management (Volume 3 of 3) Consolidated Chemical User Safety and Health Requirements</a>	Handbook
DOE-STD-1167-2003 Reaffirmation Memo	<a href="#">Reaffirmation of DOE-STD-1167-2003, Respiratory Acceptance Program for Supplied Air Suits</a>	Reaffirmation Memo
DOE-STD-1167-2003 Reaffirmed 2018	<a href="#">Respiratory Acceptance Program for Supplied Air Suits</a>	Standard

## **NATIONAL STANDARDS ACTION**

LANL's [IHS](#) subscription reports these changes. ESM Ch 1 Section Z10 says "Errata (correct errors) to any document and Tentative Interim Amendments (for NFPA) are mandatory regardless of contract award date or code of record," so these apply—assuming the standard is part of the project's code of record.

Document number: IEEE C57.110

Publication Date: 6/14/2018

Title: Recommended Practice for Establishing Liquid Immersed and Dry-Type Power and Distribution Transformer Capability when Supplying Nonsinusoidal Load Currents

Type of Change: Complete Revision

Document number: ISA 84.00.01 P1

Publication Date: 9/2/2004

Title: Functional Safety: Safety Instrumented Systems for the Process Industry Sector - Part 1: Framework, Definitions, System, Hardware and Software Requirements

Status: Withdrawn

Replaced by: ISA 61511-1

Type of Change: Status Change

Document number: ISA 84.00.01 P2

Publication Date: 9/2/2004

Title: Functional Safety: Safety Instrumented Systems for the Process Industry Sector - Part 2: Guidelines for the Application of ANSI/ISA-84.00.01-2004 Part 1 - Informative

Status: Withdrawn

Replaced by: ISA 61511-2

Type of Change: Status Change

Document number: ISA 84.00.01 P3

Publication Date: 9/2/2004

Title: Functional Safety: Safety Instrumented Systems for the Process Industry Sector - Part 3: Guidance for the Determination of the Required Safety Integrity Levels - Informative

Status: Withdrawn

Replaced by: ISA 61511-3

Type of Change: Status Change

Document number: NFPA 1 AMD 1

Publication Date: 8/14/2018

Title: Fire Code

Type of Change: Amendment

Document number: NFPA 13 AMD 2

Publication Date: 8/14/2018

Title: Standard for the Installation of Sprinkler Systems

Type of Change: Amendment

Document number: NFPA 70 AMD 17  
Publication Date: 8/14/2018  
Title: National Electrical Code  
Type of Change: Amendment

Document number: NFPA 72 AMD 1  
Publication Date: 8/14/2018  
Title: National Fire Alarm and Signaling Code  
Type of Change: Amendment

Document number: NFPA 101 AMD 4  
Publication Date: 12/6/2017  
Title: Life Safety Code  
Type of Change: Amendment

### **WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED**

Whether the problem was the engineering design or the work package sequencing, this incident was clearly a fail...



*A house in Lawrence on Thursday. —Carl Russo / The Eagle-Tribune via AP*

### **[Feds Pinpoint Cause of Deadly Mass. Gas Explosion \(emphasis added below\)](#)**

Crews failed to relocate pressure-sensing lines from an old cast-iron distribution main during a mid-September Columbia Gas pipeline replacement, igniting a series of explosions and fires

north of Boston, according to a preliminary report by federal investigators. The mistake resulted in one death, 25 injuries and 131 damaged structures in Lawrence, Andover and North Andover on Sept. 13.

The contracted work in South Lawrence being overseen by a Columbia Gas inspector involved tying in a plastic distribution main and retiring an early-1900s cast-iron, low-pressure distribution main. The National Transportation Safety Board report notes the work package did not specify the location of sensing lines or require the relocation that would have ensured the regulators were sensing actual system pressure. “Once the contractor crews disconnected the distribution main that was going to be abandoned, the section containing the sensing lines began losing pressure,” the report says. “As the pressure ... dropped about 0.25 inches of water column (about 0.01 psig), the regulators responded by opening further, increasing pressure in the distribution system.”

The report notes that Columbia’s monitoring center in Columbus, Ohio, received two high-pressure alarms minutes before the disaster but “had no control capability to close or open valves.” A Columbia Gas controller reported the high-pressure event to the Meters and Regulations group in Lawrence at 4:06 p.m., before the first 911 call five minutes later. Columbia shut down the regulator by 4:30 p.m. and “critical valves of the involved natural gas distribution system were closed by 7:24 p.m.,” the report says. The utility then began shutting off residential meters...

## **LAST MONTH'S UPDATE TOPICS**

Miss an issue? The archive is at "Monthly Update" on the Standards homepage. Last month's topics:

- **Tailoring Specs**
- **FY18 Standards Program Accomplishments/Status**
- **October is Standards Party Month**
- **Training & Qualification**
- **Report Non-Government Standards Work**
- **LANL Standards Issued in September**
- **DOE Technical Standards Action**
- **National Standards Action**
- **When Good Conduct of Engineering Isn't Followed**

The views expressed in this email are not necessarily those of my employer, which will change November 1.

To request a change to this newsletter's distribution, please contact me.

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